

SP-R3 Assess Relationship of Project Operations and Recreation*October 25, 2002***1.0 Introduction/Background**

Operation of the Federal Energy Regulatory Commission (FERC) project affects opportunities for a variety of Lake Oroville area outdoor recreation activities. The project directly affects water-related activities such as swimming, boating, and fishing, and can indirectly affect other activities such as picnicking, camping, or trail use. This study will examine the effects of the project, such as changes in water temperature, reservoir pool levels, and flow rates/water release times on a variety of recreational uses within the Study Area.

According to the Initial Information Package (IIP), there are specific recreation facilities that have limited usefulness during times of low water. Low runoff into the reservoir (e.g., mid-1980s through early 1990s), combined with project operations, can result in extremely low water levels. Originally, boat ramps at the project were not designed to work under such conditions. It was for this reason that ramps at Bidwell Canyon and Lime Saddle were extended and the Spillway ramp was modified to facilitate launches at low water.

For the water year 1999-2000, the level of the lake was 853 feet above sea level (asl) at the beginning of the recreation season in April. At the end of the recreation season in September, the level of the lake was 786 feet asl (a 67 foot difference). This difference is typical within the Study Area, preventing the use of some recreational facilities during low water periods and making shoreline exploration difficult.

2.0 Study Objective

The main objective of this study is to determine the effects of current conditions and any proposed changes to project operations on recreational use and recreational experiences of visitors during various activities.

3.0 Relationship to Relicensing /Need for the Study

This study is needed to determine impacts of project operations on recreational uses, and on the quality of visitors' experiences during activities that occur within the Study Area. Impacts to recreational uses and experiences can occur as a result of changes in reservoir pool levels, reservoir water temperature, and changes in flow rates downstream of the Oroville Reservoir. Information gathered for this study will be used to recommend measures or facilities that may create, preserve, or enhance recreational opportunities within the Study Area and in its vicinity (Subpart F, Section 4.51 of 18 CFR).

The purpose and need of this study is to address Issue Statement R3—effects of facilities operations on recreation and socioeconomic opportunities. Specifically, this study will address Issues RE 44, 50, 51, 63, 108 and 109.

4.0 Study Area

The Study Area includes Lake Oroville, the lands and waters within and adjacent to (1/4 mile) the FERC project boundary, and adjacent lands, facilities and areas with a clear project nexus.

Campgrounds

Bidwell Canyon Campground	Floating Campsites
Bloomer Cove Boat-In Campsite (BIC)	Lime Saddle Campground
Bloomer Knoll BIC	Lime Saddle Group Campground
Bloomer Point BIC	Loafer Creek Campground
Bloomer Group BIC	Loafer Creek Group Campground
Craig Saddle BIC	Loafer Creek Horse Campground
Foreman Creek BIC	Oroville Wildlife Area (OWA) (Larkin Road Camping Area)
Goat Ranch BIC	North Thermalito Forebay RV “en route” Campground

Day Use Areas (DUAs)

Lake Oroville Visitor Center	Saddle Dam DUA
Lime Saddle DUA	North Thermalito Forebay DUA
Bidwell Canyon DUA	South Thermalito Forebay DUA
Loafer Creek DUA	Thermalito Afterbay DUA (off Highway 162)
Oroville Dam Overlook Area	Thermalito Afterbay Wilbur Road DUA
Spillway DUA	Thermalito Afterbay Larkin Road DUA
	Burma Road and Lakeland Boulevard DUA

Boat Launches

Lime Saddle Boat Launch Area (BLA)	Foreman Creek Car-Top BLR
Loafer Creek BLA	Dark Canyon Car-Top BLR
Bidwell Canyon BLA	Stringtown Car-Top BLR
Enterprise Boat Launch Ramp (BLR)	Vinton Gulch Car-Top BLR
Nelson Bar Car-Top BLR	Thermalito Afterbay (4)
South Thermalito Forebay	North Thermalito Forebay
Diversion Pool-Burma Road and RR Grade	

Other Recreational Facilities with Project Nexus

Lime Saddle Marina	Bidwell Marina
Floating Restrooms	Aquatic Center
Brad P. Freeman Trail	Feather River Hatchery
Lake Oroville State Recreation Area	Clay Pit State Vehicular Recreation Area (SVRA)

(LOSRA) Hiking/Equestrian Trail	Model Aircraft Flying Area
Diversion Pool	OWA
Dispersed use areas along the upstream and downstream reaches of the Feather River	

5.0 General Approach

Task 1—Research Project Operations Issues

Researchers will solicit input from the California Department of Water Resources (DWR), California Department of Parks and Recreation (DPR), California Department of Fish and Game (DFG), and the California Department of Boating and Waterways (DBW). To facilitate an understanding of the extent of recreation facilities and water bodies affected by low pool levels and other project operations, the research team will use information from other studies such as SP-R7—Reservoir Boating Survey; SP-R9—Existing Recreation Use; SP-R13—Recreation Surveys, along with information from the Engineering and Operations Work Group. The research team will request the following output information regarding Oroville Reservoir pool elevations from all modeling runs conducted by the Engineering and Operations Work Group:

- Annual highest elevation;
- Annual high month;
- End of May average over 70 year period of record;
- End of June average over 70 year period of record;
- End of July average over 70 year period of record;
- End of August average over 70 year period of record;
- Minimum and maximum (over 70 years) and standard deviations;
- Flow rates for the upper and lower reaches of the Feather River; and
- Water temperature data.

A database will be developed with the above information based on monthly lake elevations on the same day each month, beginning in 1968. This will allow for a comparative analysis of LOSRA attendance, income and cost data relative to these lake elevation data. Samples of flow and temperature data are presented in Attachments B, C, and D.

Researchers will also review existing plans, reports, and studies, and talk with local and other “regular” users to ascertain how and where facilities are affected by low pool levels and other impacting conditions resulting from project operations. Once identified, information about the specific site(s) can be gathered and developed to understand project operations issues.

Task 2—Assess the Effects of Project Operations on Recreation Use

This task will have several subtasks to assess specific facilities potentially affected by low pool levels. Attendance data dating back to 1990 will be reviewed to assess the relationship between low pool levels and recreational uses. The purpose of this is to develop a brief, historical perspective about how project operations may affect current recreational uses and those in the next license period.

Task 2A—Assess the Effects of Low Pool Levels on BLR Access

Researchers will assess the effects of low pool levels on BLR access by combining data from field observations and SP-R9. Researchers will note BLR use limitations as pool levels change. Researchers will also note use trends as pool levels change. The effect of seasonal low pool level on Bidwell Canyon, Spillway, Lime Saddle, and Enterprise BLRs will be assessed.

Task 2B—Assess the Effects of Low Pool Levels on Car-Top BLR Access

Researchers will assess the effects of low pool levels on car-top BLR access by combining data from field observations and SP-R9. Researchers will note car-top boat launch ramp access limitation as pool levels change. Researchers will also note use trends as pool levels change. The effect of seasonal low pool levels on Nelson Bar, Foreman Creek, Dark Canyon, Stringtown, and Vinton Gulch car-top BLRs will be assessed.

Task 2C—Assess the Effects of Low Pool Levels on BIC Access

Researchers will assess the effects of low pool levels on BIC access by combining data from field observations and SP-R9. Researchers will note BIC access as pool levels change. Researchers will also note use trends as pool levels change. The effect of seasonal low pool levels on Bloomer Cove, Bloomer Knoll, Bloomer Point, Bloomer Group, Craig Saddle, Foreman Creek, and Goat Ranch BICs will be assessed.

Task 2D—Assess Effects of Low Pool Levels on Swimming Access

The research team will review pool level data and work with the Engineering and Operations and Environmental Work Groups to examine ways to facilitate an improvement in swimming experiences. Initial investigations and discussions with users (e.g., Sonny Brandt) and managers (DWR and DPR staff) suggest that currently there are limited swimming areas during low pool level. Possible solutions will be investigated and documented for Lake Oroville, the low flow section of the Feather River below Oroville Dam, Thermalito Afterbay, and Thermalito North and South Forebays.

Task 2E—Assess Effects of Water Temperature on Swimming

The research team will review water temperature data and work with the Engineering and Operations and Environmental Work Groups to examine ways to facilitate an improvement in swimming experiences. Possible solutions will be investigated and documented for Lake Oroville, the low flow section of the Feather River below Oroville Dam, Thermalito Afterbay, and Thermalito North Forebay. Potential conflicts with fisheries will be investigated as part of this task. For example, DFG has specific requirements for Study Area fish species during certain times of the year. If improvements in swimming can be made by adjusting the temperature regimes without negatively impacting the fishery, a solution may be realized.

Task 2F—Assess Flow Rates and Water Temperature on Fishing

Researchers will investigate effects of flows and water temperature on fishing suitability. The research team will work closely with the Environmental Work Group to understand the effects of flow rates on sportfish distribution and abundance in Lake Oroville and the Thermalito Afterbay and Forebays.

Task 3—Assess the Effects of Project Operations on Recreation Experiences

This task will assess visitors’ attitudes and opinions about the effects of project operations on recreational experiences. Visitors’ attitudes and opinions will be summarized regarding reservoir conditions at low pool levels, utility of launching and docking facilities at low pool levels, and potential management and facility improvements. Researchers will solicit input from boaters and other visitors using BLRs, car-top boat launches, and BICs. Data for this task will be collected as part of SP-R13—Recreation Surveys.

Task 4—Assess Future Operational Scenarios

This task will assess how changes in pool levels, water temperature, different release patterns from Lake Oroville, different inflow patterns to Lake Oroville, and other operational factors might affect recreational uses of the Study Area. Extrapolations can be made about the effects of specific project operation scenarios on recreation. This will be accomplished by combining data gathered in SP-R13 with information about planned projects solicited from DWR, DPR, and DFG agency personnel.

It will also be accomplished by using a reservoir pool level and recreation attendance model developed for the Central Valley Project Improvement Act (CVPIA) Programmatic EIS/EIR (Attachment A).

6.0 Results and Products/Deliverables

Results

Results will be used to develop protection, mitigation, and enhancement measures (PMEs) for facilities and/or areas negatively affected by project operations.

Products/Deliverables

The following products will be developed for this study:

- Interim Report
- Draft Final Report

The Interim Report will be based on existing operations, and the Draft Final Report will include various proposed operational scenarios for the new license period. Both reports will contain an executive summary; an introduction; objectives; methods; results; and a discussion.

7.0 Coordination and Implementation Strategy

Coordination with Other Resource Areas/Studies

This study will require coordination with SP-R7—Reservoir Boating Survey; SP-R9—Existing Recreation Use; SP-R13—Recreation Surveys; and SP-R16—Whitewater Boating. It will also require coordination with studies that will be conducted by the Engineering and Operations Work Group.

Issues, Concerns, Comments Tracking, and/or Regulatory Compliance Requirements

The results of the study will address Issue Statement R3—Effects of facilities operations on recreation and socioeconomic opportunities, and the following specific Issues: RE 44, 50, 51, 63, 108 and 109.

8.0 Study Schedule

Data collection: September through November 2002.

Report writing and data analysis: December through February 2003.

Interim Report due: March 2003.

Draft Final Report due: September 2003.

Attachment A

Existing Information

1. Recreation pool level attendance model from the Programmatic EIS/EIR for the Central Valley Project Improvement Act.
2. IIP facilities operations and recreational resources data.

Attachment B

Example 1 of Flow Data to be Reported

Table X. Feather River Minimum Flow Requirements ⁽¹⁾

Percent of Normal ⁽²⁾ Runoff (%)	Oct – Feb (cfs)	Mar (cfs)	Apr – Sep (cfs)
> 55	1,700	1,700	1,000
< 55	1,200	1,000	1,000
(1) If Oroville surface elevation is greater than 733 feet.			
(2) Normal is defined as the mean (1911 – 1960) April through July unimpaired runoff near Oroville of 1,942,000 acre-feet.			

Attachment C
Example of Water Temperature Data to be Reported

Table Y. Water Temperature Objectives

Period	Temperature	
	(°F)	(°C)
April 1-May 15	51°	10.6
May 16-May 31	55°	12.8
June 1-June 15	56°	13.3
June 16-August 15	60°	15.6
August 16-August 31	58°	14.4
September 1-September 30	52°	11.1
October 1-November 30	51°	10.6
December 1-March 31	55°	12.8

Attachment D

Example 2 of Flow Data to be Reported

